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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,415	10/01/2003	Bartley Mark Hirst	10014356-1	5138

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EXAMINER

GLEITZ, RYAN M

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 04/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/674,415	Applicant(s) HIRST ET AL. (SM)	
	Examiner Ryan Gleitz	Art Unit 2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/01/03</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: the term “compirator” is used throughout the specification (at least 14 occurrences) and should be changed to --comparator--.

Appropriate correction is required.

Claim Objections

Claim 21 is objected to because “compirator” should be ----comparator--.

Claim 7 is objected to because “the temperature of the heater is determined to not be rotating” is grammatically unclear. Temperatures cannot rotate.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-19, 21, and 23-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogawahara et al. (US 6,411,785).

Ogawahara et al. disclose a fusing system including a fuser roller (51); a pressure roller (53) arranged parallel to the fuser roller (51) for providing pressure to a medium; a heater (69) external to the fuser roller (51) and applying heat to the fuser roller (51) when the heater (69) is operated to apply heat; and a control mechanism (63) that the controls the heater to: reduce heat

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provided by the heater (69) when the temperature of the heater is determined to be above a predetermined maximum heater temperature. See col. 11, lines 16-22.

Regarding claim 2, the predetermined maximum heater temperature is well above 180 degrees C as shown by time 2 in figure 10, which reads on about 250 degree C. See col. 11, line 22.

Regarding claim 3, the control mechanism (63), after reducing heat provided by the heater (69) when the temperature of the heater is determined to be above a predetermined maximum heater temperature, controls the heater to increase heat provided by the heater when the temperature of the heater is determined to fall below a predetermined target heater temperature, as shown by figure 10 at time 4.

Regarding claims 4 and 5, a heater temperature sensor (70) or thermistor detects the temperature of the heater.

Regarding claim 6, the heater (69) is separated and the fixing roller is stopped (col. 14, lines 50-53), which reads on the control mechanism controls the heater to reduce the heat provided by the heater when the fuser roller is determined to not be rotating.

Regarding claims 8 and 9, the control mechanism (63) controls the heater (69) to reduce the heat provided by the heater when the temperature of the fuser roller is determined to be above a predetermined operating temperature. See figure 14, ST205-207. THcont can be 160 degrees C (col. 20, line 56), which reads on the predetermined operating temperature is about 180 degrees C.

Regarding claims 10 and 11, a fuser roller temperature sensor (62) or thermistor detects the temperature of the fuser roller.

Regarding claim 12, the control mechanism (63) controls the heater (69) to reduce the heat provided by the heater when the temperature of the pressure roller (53) is determined to be above a predetermined pressure roller temperature. See figure 14, ST 202-204. While ST204 only provides that the control mechanism executes operation for separating pressure roller from fixing roller, separating the pressure roller would reduce the heat provided by the heater to the pressure roller.

Regarding claims 13 and 14, a pressure roller temperature sensor (67) or thermistor detects the temperature of the pressure roller (53).

Regarding claim 15, the heater (69) is provided by a heating roller (55) operable to contact the fuser roller (51).

Regarding claims 16-18, the control mechanism (63) comprises a processor (96) programmed to provide control functions and a control circuit, shown by the heating power circuit in figure 7. The surface temperature of heating roller (55) is controlled to become equal to a predetermined set temperature by control mechanism as power to the heating source (69) is turned on and off. See col. 13, lines 16-21. This reads on a switch and a comparison circuit.

Regarding claim 19, the comparison circuit is configured to perform the same control on the fuser roller (51). See col. 13, lines 16-21.

Regarding claim 21, control mechanism (63) contains elements that perform the comparisons of the temperatures of the heating roller (55) and fusing roller (51). See col. 13, line 25 to col. 19, line 67. The control mechanism also reads on comparitors.

Regarding claims 23-33, the fusing system above also reads on the method for controlling temperature for a fusing system.

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Claims 1, 2, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuji (US 4,977,431).

Fuji discloses a fusing system including a fuser roller (10); a pressure roller (20) arranged parallel to the fuser roller (10) for providing pressure to a medium passing between the fuser roller and the pressure roller; a heater (31) external to the fuser roller (10) and applying heat to the fuser roller when the heater is operated to apply heat; and a control mechanism (40) that controls the heater (31).

When the temperature of the heater (31) reaches 205 degrees C, which is about 250 degrees C, the heater is turned off (col. 5, lines 24-41), which reads on reducing heat provided by the heater when the temperature of the heater is determined to be above a predetermined maximum heater temperature.

Regarding claim 18, figure 3 shows a the circuit of the control mechanism (40), including a switch (47) controlling power to a heater lamp of the heater; and a comparison circuit (43) which is configured to receive an input signal indicative of the temperature of the heater and to provide an output causing the switch (47) to prevent power to the heater lamp when the input signal indicative of the temperature of the heater (31) indicates that the temperature of the heater is above a predetermined maximum heater temperature.

Regarding 19, the control mechanism having the comparison circuit is also configured to receive an input signal, as shown in figure 1, indicative of the temperature of the fuser roller (10) and to provide an output causing the switch to prevent power to the heater lamp when the input signal indicative of the temperature of the fuser roller (10) indicates that the temperature of the fuser roller (10) is above a predetermined operating temperature. See col. 5, lines 24-41.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawahara et al. (US 6,411,785) in view of Anthony et al. (US 2003/0021611).

Ogawahara et al. disclose the fixing apparatus above, but do not disclose a rotation sensor.

However, Anthony, et al. disclose a motion sensors to ensure that a fuser stops rotating (paragraph [0004]), which reads on a rotation sensor that detects the rotation of the fuser roller. If the fuser roller does stop rotating, the fuser is shut down, which reads on preventing power to the heater lamp then the fuser roller is not rotating.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the fixing apparatus of Ogawahara et al. with the motion sensors taught by Anthony et al. to avoid overheating. See paragraph [0004].

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fuji (US 4,977,431) in view of Yamamoto et al. (JP 04-204858).

Fuji discloses the fixing apparatus above including triac (44), but does not disclose a photo diac coupled with the triac.

However, Yamamoto et al. disclose a photo-triac (14) for turning on and off a triac (13). See abstract, lines 12-13. While the Abstract of Yamamoto et al. reads "photo-TRIAC" the circuit element shown by reference numeral 14 in figure 1 appears to be the same circuit element shown by Applicant in figure 3. Additionally, a triac is merely special type of diac. A triac is a diac that can be variably controlled. The term diac is broader than the term triac, and therefore a photo-triac would read on the photo-diac as claimed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the fixing apparatus of Fuji with the photo-triac coupled with a triac taught by Yamamoto et al. to prevent the adverse affect of noise and voltage fluctuations when a heater is turned on. See abstract, lines 1-4.

Contact Information

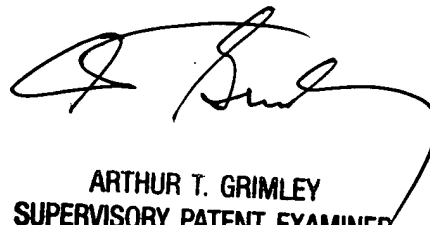
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Gleitz whose telephone number is (571) 272-2134. The examiner can normally be reached on Monday-Friday between 9:00AM and 6:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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